EXECUTIVE SUMMARY

State of Montana
Department of Fish, Wildlife, and Parks

2013 Forest Inventory and Sustained Yield Calculation

Prepared by:
Mason, Bruce & Girard, Inc

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Executive Summary

In 2011, Montana's 62nd Legislature passed House Bill 619 (since codified in 87-1-201 and 87-1-621, MCA), which revised MT-FWP's forest management laws by requiring the calculation of an annual sustained yield on MT-FWP lands. Pursuant to this law, MT-FWP contracted with Mason, Bruce and Girard, Inc. to perform a forest inventory and an annual sustained yield calculation on the Department's forest land.

Approximately 360,000 acres of MT-FWP land was included in this study and from that, about 151,000 acres are considered to have potential commercial value. From that commercial forest land base, about 57,000 acres are available for harvest and it is these acres that contribute to the annual sustained yield calculation.

Currently, the timber inventory on those 57,000 acres is approximately 272 million board feet (MMbf). Available acres and timber volume are distributed across the state as follows:

Acres and Timber Volumes included in annual sustained yield calculation

Region	Commercial Forested Acres	Commercial Forested Acres Available for Harvest	Timber Volume (Mbf) on Available Acres
1	10,986	8,227	55,302
2	81,831	37,875	152,437
3	46,337	10,171	60,011
4	11,426	659	3,609
5	896	472	794
7	-	-	-
Total	**151,477**	**57,403**	**272,153**

Growth and yield modeling utilized the forest inventory data, which was then incorporated into a Forest Management Model used to calculate the annual sustained yield. The model maximizes net present value of timber harvests while meeting constraints designed to reflect the legal and administrative policies, and management objectives of MT-FWP.

Sustained yield is typically thought of as the sustained harvest level that managed forest land can support over the long-term (50+ years). Because most of MT-FWP's forest land hasn't been in active management, many stands are currently either over-stocked or under-stocked. Due to the characteristics of these stands, this study provides a short-term and a long-term sustained yield. It is a usual and customary practice to express sustained yield in terms of an annual volume, and that convention is followed in this study. Harvest opportunities on several units, however, are small enough that the annual volume would not support a viable timber sale. Sales on those units are expected to be less frequent in order to have enough volume to make a viable timber sale.

In the short-term (<50 years), under-stocked stands will have less of a harvest as stands grow and reach a point in time where a commercial thin is appropriate. Alternatively, more harvest will be scheduled in over-stocked stands to bring them down to desired stocking levels. Over the long-term (>50 years), stands will eventually reach regulated stocking conditions resulting in a relatively consistent annual sustained yield moving forward through time.

With this in mind, the following table shows the short-term and long-term annual sustained yield on each management unit included in this study:

Region	Unit	Unit Type	Available Acres	Short-term SYC (Mbf/Year)	Long-term SYC (Mbf/Year)
1	Bull River	WMA	991	53	129
1	Kootenai/Falls	WMA	-	-	-
1	Kootenai/West	WMA	881	152	103
1	Kootenai/Woods Ranch	WMA	406	46	37
1	Mount Silcox	WMA	632	92	62
1	North Swan Valley	WMA	1,375	172	142
1	Ray Kuhns	WMA	954	120	94
1	Lake Mary Ronan	State Park	104	12	8
1	Lone Pine	State Park	215	30	19
1	Thompson Chain Of Lakes (East)	State Park	287	3	23
1	Thompson Chain Of Lakes (West)	State Park	1,300	107	119
1	Wayfarers	State Park	27	4	2
1	West Shore	State Park	86	10	9
1	Wild Horse Island	State Park	870	97	82
1	Kokanee Bend	FAS	47	2	4
1	Old Steel Bridge	FAS	-	-	-
1	Swan River	FAS	52	3	5
2	Blackfoot-Clearwater 1	WMA	1,438	133	110
2	Blackfoot-Clearwater/ Harpers Lake	WMA	6,686	440	364
2	Calf Creek	WMA	712	70	58
2	Fish Creek	WMA	9,763	341	321
2	Fish Creek	State Park	2,217	72	64
2	Garrity Mountain	WMA	3,360	88	368
2	Lost Creek	WMA + State Park	107	5	4
2	Marshall Creek	WMA	8,692	522	431
2	Mount Jumbo	WMA	99	6	5
2	Nevada Lake	WMA	396	36	19
2	Spotted Dog	WMA	-	-	-
2	Threemile	WMA	4,070	353	292
2	Beavertail Hill	State Park	-	-	-
2	Milltown	State Park	90	5	5
2	Erskine	FAS	-	-	-
2	Monture Creek	FAS	-	-	-
2	River Junction	FAS	44	4	2
2	Stuart Mill Bay	FAS	201	24	25
3	Canyon Creek	WMA	1,696	78	65
3	Fleecer Mountain	WMA	460	39	19

Region	Unit	Unit Type	Available Acres	Short-term SYC (Mbf/Year)	Long-term SYC (Mbf/Year)
3	Gallatin	WMA	-	-	-
3	Madison-Bear Creek	WMA	-	-	-
3	Madison-Wall Creek	WMA	-	-	-
3	Mt. Haggin	WMA	7,632	913	589
3	Robb-Ledford	WMA	-	-	-
3	Bannack	State Park	-	-	-
3	Lewis And Clark Caverns	State Park	383	27	16
3	Missouri Headwaters	State Park	-	-	-
4	Beartooth	WMA	-	-	-
4	Beckman	WMA	-	-	-
4	Blackleaf	WMA	-	-	-
4	Ear Mountain	WMA	-	-	-
4	Judith River	WMA	-	-	-
4	Marias River	WMA	-	-	-
4	Smith River/Fort Logan	WMA	-	-	-
4	Sun River	WMA	-	-	-
4	Sun River 2	WMA	-	-	-
4	Sluice Boxes	State Park	414	24	16
4	Smith River (Central)	State Park	166	13	6
4	Smith River (North)	State Park	-	-	-
4	Smith River (South)	State Park	78	6	3
4	Tower Rock	State Park	-	-	-
5	Haymaker	WMA	472	3	4
5	Silver Run	WMA	-	-	-
5	Yellowstone	WMA	-	-	-
7	Isaac Homestead	WMA	-	-	-
7	Makoshika	State Park	-	-	-
Total			**57,403**	**4,105**	**3,624**

Across the entire state, on acres available for harvest, this study calculated the total annual sustained yield in the short-term to be **4.1 million board feet per year** and **3.6 million board feet per year** in the long-term. These sustained yield calculations meet the intent of the enacted legislation as well as the policies, goals, and objectives specified by the Montana Department of Fish, Wildlife, and Parks. The results presented above represent the annual sustained yield on commercial forested acres available for harvest as determined by MT-FWP. This study also calculated the maximum biological yield and annual sustained yield on all commercial forested and operable acres. Those results are found within the body of this report.

It is important to realize that this plan represents a strategic level plan and is intended to establish guiding harvest levels. Implementing a plan like this would require another layer of planning, which would consider the operational issues associated with harvesting and could result in a harvest schedule different from the one presented here.

The following sections of this report explain the methods and rationale for this annual sustained yield calculation for MT-FWP.